

PERSPECTIVES ON ENERGY POLICY:

Security, Economics, and the Environment

March 18 and 19, 2009 University of California, San Diego San Diego, California





EXECUTIVE SUMMARY

On March 18 and 19, 2009, Sandia National Laboratories and the University of California San Diego (UCSD) Sustainability Solutions Institute (SSI) brought together 27 leaders from academia, government, and the private sector to discuss key energy policy issues and proposed values- and outcomes-based approaches to energy policy. The goal of the workshop was to bring together leaders from diverse backgrounds to identify promising areas for energy policy, based on the understanding of intersecting issues, assumptions, and priorities from the national security, economic, and environmental perspectives.

Over the two days of the workshop, participants identified and proposed initiatives in five areas:

- Development of global linkages between national security, economics, and environmental concerns;
- Education to create the workforce needed for the next generation of energy technologies and deepen the public's understanding of their energy choices;
- New approaches to cars and transportation;
- Leadership that focuses on long-term outcomes rather than short-term solutions; and
- Incentives and goals for energy efficiency.

By workshop end, participants underscored one central point:

Decisions about energy and energy policy are inextricably linked to economic, environmental, and national security considerations, and have significant consequences in all three areas.

Themes

Throughout the interactive "trialogue," several major themes emerged:

- Linkages. The overwhelming acceptance of the link between energy and the three perspectives—economic, environmental, and national security—by such a diverse group was fundamental and not to be taken for granted. Acceptance of these links, and particularly the inclusion of national security, departs significantly from much of today's thinking.
- Values. Also woven throughout the workshop was a high-level consideration of values and of energy policy as value-driven. All stakeholders in energy decisions—technical experts and scientists, decision-makers, the private sector, and the public—start from a set of core values. Considering energy policy as values-driven is a shift, and points to clear steps that will be essential in achieving radical transformation of our energy policy.
- Public engagement. Every strategic goal and action plan discussed during the workshop took into account the critical role of the public. Effectively raising public awareness and helping the public work through difficult tradeoffs will require leaders to think beyond traditional energy-related institutions and frameworks. Organizations and institutions that reach great numbers of the American public (such as the American Association of Retired Persons and the American Automobile Association) should take on energy issues as central to their mission and communicate the choices and tradeoffs to their membership.





Les Shephard, Sandia National Laboratories

- Rethinking the consumer understanding of green. For consumers struggling to make ends meet, buying green—typically seen as spending more to gain environmental benefits—is an unaffordable luxury. The government and the private sector must find ways to appeal to the core values of Americans beyond their desire for a cleaner environment and tap into their need for quality products at affordable costs, their desire for increased national security, and their support for economic growth and job creation.
- Elevating the stature of the mundane. Distributed generation does not make newspaper headlines. But a well-planned distributed power-generation network could significantly improve the nation's ability to provide reliable and efficient electricity. It will be important to encourage policy makers to support solutions based on their potential impact and not solely on their potential to make headlines.
- New voices. Too often, energy discussions involve the same relatively small group of players. Bringing new voices into the dialogue is essential. In particular, an intergenerational approach is needed, with young people fully engaged and acknowledged as stakeholders in every energy decision.
- Rethinking education. The education system was seen as lacking the tools and curricula needed to position the United States to create the next-generation green workforce. Major enhancements to the primary, secondary, and post-secondary education systems are key to building future scientists, decision-makers, and a public capable of addressing energy challenges.

Issues and Recommendations

Several key issues and recommendations for action surfaced during workshop discussions:

- Focus policy on outcomes and values rather than on mandating specific technical solutions. Current energy policies often mandates solutions, such as specifying the market penetration level for a particular technology. Policies based on outcomes places the emphasis on the impact of solutions rather than a particular technology. For example, setting overall targets for transportation emissions rather than specifying the number of zero emissions vehicles or amount of biofuels sold could enable new paradigms for transportation that consider vehicles and fuels as a system.
- Consider long-term outcomes when making energy decisions. Policies created in response to shocks or crises may have unforeseen long-term implications. Policies must shift to a long-term, outcomes-based framework that includes systems-level analysis of the impacts of policy decisions. Approaches such as forward-looking, transparent systems modeling and analyses that explore a range of factors would allow better understanding of the broader impact of particular actions and enable better long-term decisions.



Charles Kennel, University of California, San Diego and Alison Silverstein, Consultant

Conduct an assessment of the nation's energy security status comparable to those for environmental and economic security. The United States conducts an annual inventory of its greenhouse gas emissions and sinks using methodologies consistent with those recommended by the International Panel on Climate Change guidelines. Moreover, the economic impacts of energy are often quantified in terms that relate energy use to Gross Domestic Product (GDP), such as energy consumed per dollar of GDP. Measuring energy security has proven to be more elusive. Developing a recognized process for conducting an energy security review similar to the established environmental and economic assessments would facilitate placing security considerations alongside environmental and economic considerations when setting energy policy.

- Create a distinguished, high-level independent council, patterned after the Council on Foreign Relations, that could act as a forum for analyzing and communicating critical issues to energy policy makers and the public. The Council on Foreign Relations (CFR) is an independent, non-partisan membership organization, think tank, and publisher that serves as a resource on the foreign policy choices facing the United States and other countries.³ A similar Council that provides an independent venue for addressing energy policy options would help deepen the nation's understanding of how security, economics, and environmental considerations come together and thus inform energy policy decisions.
- Develop educational curricula that addresses energy and sustainability suitable for all levels. Preparing for the 21st century workforce requires new approaches to education at all levels. For example, K–12 curricula are needed to create an informed public. Community college and vocational training in new energy technologies and systems will provide technicians to install and maintain new and expanded energy technologies.

In addition, an initiative similar to the Land-Grant College Act of 1862, which established agricultural colleges throughout the country but focused on university-based sustainability solutions centers of excellence, would provide a nation-wide educational focus on energy and sustainability throughout the university

system. This would accelerate the development of the nextgeneration technologies and workforce.

Bill Reinert, Toyota

• Develop tangible messages that engage the broad public to think about their energy choices and make informed decisions. Providing clear information can help individuals make smart choices to minimize their energy use. Information sites like those of the California Energy Commission's Consumer Energy Center⁴ and standards such as the Energy Star⁵ product rating system provide consumers with transparent information



Susan Rochford, Council on Competitiveness

about the energy impact of their purchases or behaviors. Expanded messages and explicit choices that are accessible across socioeconomic levels are needed to engage the public to make smart energy choices.

Participants closed the workshop with enthusiasm for taking actions to move toward the recommendations discussed above. They agreed that increased understanding of the three-way linkages among economic, environmental, and national security is necessary, both for addressing the impact of each perspective on energy policy, and also for the implications that policy choices have on the nation's energy picture. In particular, the participants agreed that in many high-level energy policy conversations to date, the national security perspective has been neglected or underrepresented. An intense focus on the three-way linkages will be a guiding principle in future discussions and actions.

¹ Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2007.

² International Energy Authority Report No. DOE/EIA-0384 (2008), Annual Energy Review 2008.

³ Council on Foreign Relations, http://www.cfr.org.

⁴ See http://www.consumerenergycenter.org.

⁵ See http://www.energystar.gov.

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